

We claim:-

1. A process for the production of semifinished products or leather, wherein pelts, pickled pelts or semifinished products are treated with

- a) at least one sheet silicate and
- b) at least one copolymer which is obtainable by copolymerization of

at least one ethylenically unsaturated dicarboxylic anhydride (A), derived from at least one dicarboxylic acid of 4 to 8 carbon atoms,

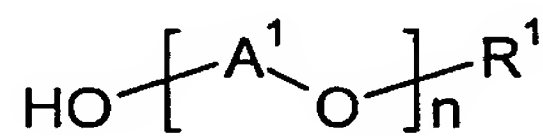
at least one vinylaromatic compound (B1) or at least one oligomer (B2) of branched or straight-chain C₂-C₁₀-alkene, at least one oligomer having an average molecular weight M_n of from 300 to 5 000 g/mol or being obtainable by oligomerization of at least 3 equivalents of C₂-C₁₀-alkene,

and

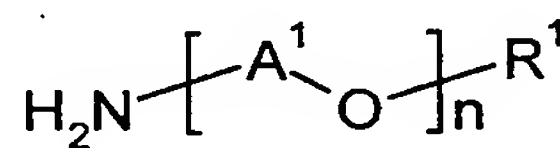
optionally at least one ethylenically unsaturated monomer (C) differing from (A) and having at least one hetero atom,

and reaction with

at least one compound (D) of the formula I a or I b



I a



I b

and optionally hydrolysis with water or aqueous alkaline solution,

where, in formula I a and I b,

A¹ are identical or different and are C₂-C₆-alkylene

R¹ is linear or branched C₁-C₂₀-alkyl and

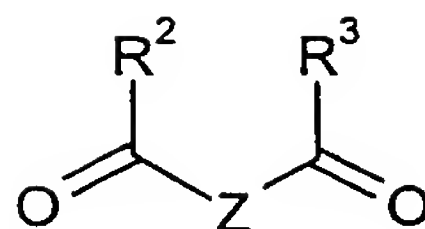
n is an integer from 1 to 200.

2. The process according to claim 1, wherein pelts, pickled pelts or semifinished products are additionally treated with

- c) at least one substance which is selected from

dicarbonyl compounds of the formula II

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II

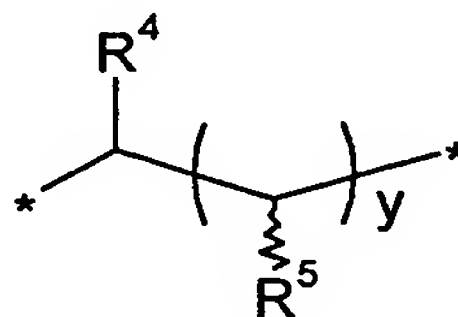
and substances which liberate a dicarbonyl compound of the formula II in the presence of water, where, in formula II,

- 5 R^2 and R^3 are identical or different and are selected from hydrogen, C_1 - C_{12} -alkyl, C_3 - C_{12} -cycloalkyl, substituted or unsubstituted, C_7 - C_{13} -aralkyl, C_6 - C_{14} -aryl, substituted or unsubstituted, it being possible in each case for two neighboring substituents to be linked to one another with the formation of a ring;
or R^2 and R^3 are linked to one another with formation of a ring,

- 10 Z is selected from a single bond and bivalent organic groups, which in turn are selected from substituted or unsubstituted C_1 - C_{12} -alkylene units, unsubstituted or substituted C_5 - C_{12} -cycloalkylene and unsubstituted or substituted C_6 - C_{14} -arylene.

3. The process according to claim 2, wherein Z is

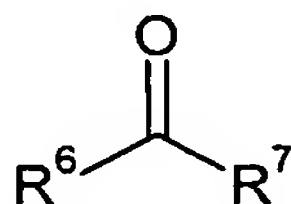
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where

- 20 R^4 is selected from hydrogen, C_1 - C_{12} -alkyl, C_3 - C_{12} -cycloalkyl, substituted or unsubstituted, C_7 - C_{13} -aralkyl, C_6 - C_{14} -aryl, substituted or unsubstituted,
y is an integer from 1 to 4, and
 R^5 are identical or different and are selected from hydrogen, C_1 - C_{12} -alkyl, C_3 - C_{12} -cycloalkyl, substituted or unsubstituted, C_7 - C_{13} -aralkyl, C_6 - C_{14} -aryl, substituted or unsubstituted, it being possible for R^4 with neighboring R^5 or
25 in each case two neighboring radicals R^5 to be linked to one another with the formation of a ring.

4. The process according to either of claims 2 and 3, wherein at least one substance which liberates a dicarbonyl compound of the formula II in the
30 presence of water is obtainable by reacting at least one carbonyl compound of the formula III

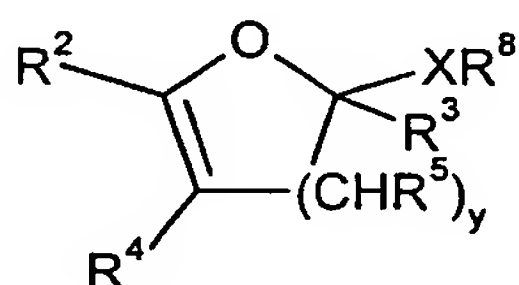


III

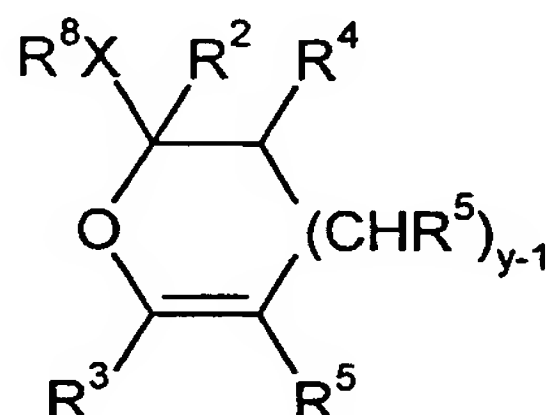
- 35 where

R^6 and R^7 are identical or different and are selected from hydrogen, C_1 - C_{12} -alkyl, C_3 - C_{12} -cycloalkyl, substituted or unsubstituted, C_7 - C_{13} -aralkyl, C_6 - C_{14} -aryl, substituted or unsubstituted, it being possible for R^6 and R^7 to be linked to one another with formation of a ring,

with at least one dicarbonyl compound of the formula II and with at least one cyclic compound of the formula IV a or IV b



IV a



IV b

where

X is selected from oxygen, sulfur and $N-R^8$, and

R^8 are identical or different and are selected from hydrogen, C_1 - C_{12} -alkyl, C_3 - C_{12} -cycloalkyl, substituted or unsubstituted, C_7 - C_{13} -aralkyl, C_6 - C_{14} -aryl, substituted or unsubstituted, formyl, CO - C_1 - C_{12} -alkyl, CO - C_3 - C_{12} -cycloalkyl, substituted or unsubstituted, CO - C_7 - C_{13} -aralkyl, CO - C_6 - C_{14} -aryl, it being possible for R^2 and R^8 or R^5 and R^8 to be linked to one another with formation of a ring and, where X is $N-R^8$, it being possible for two radicals R^8 to be linked to one another with formation of a ring.

5. The process according to any of claims 2 to 4, wherein X is oxygen.
6. The process according to any of claims 2 to 5, wherein, in formula IV a, R^2 to R^5 are each hydrogen and R^8 is methyl.
7. The process according to any of claims 1 to 6, wherein styrene is selected as a vinylaromatic compound (B1) in at least one copolymer (b).
8. The process according to any of claims 1 to 7, wherein a sheet silicate having a number average particle diameter of up to $2\ \mu m$ is used as the sheet silicate (a).
9. The process according to any of claims 1 to 8, wherein drying to a residual water content of 45% by weight or less is effected after the treatment with (a), (b) and, if appropriate, (c).
10. A formulation comprising

- (a) at least one sheet silicate and
- (b) at least one copolymer which is obtainable by copolymerization of

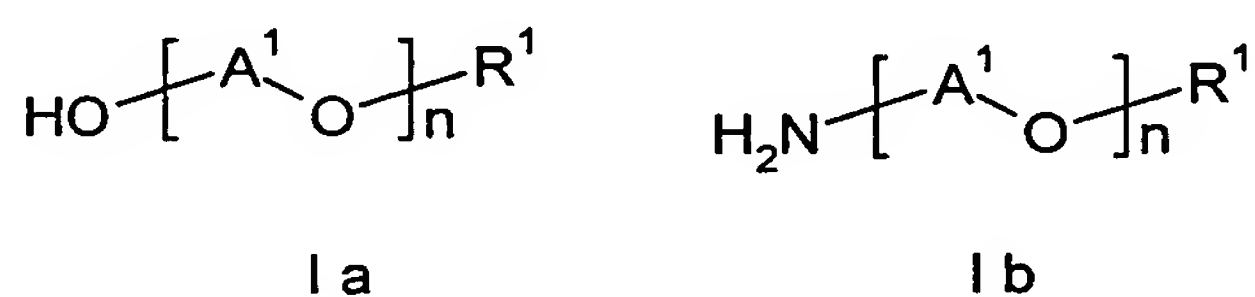
at least one ethylenically unsaturated dicarboxylic anhydride (A), derived from at least one dicarboxylic acid of 4 to 8 carbon atoms,

at least one vinylaromatic compound (B1) or
at least one oligomer (B2) of branched or straight-chain C₂-C₁₀-alkene, at least one oligomer having an average molecular weight M_n of from 300 to 5 000 g/mol or being obtainable by oligomerization of at least 3 equivalents of C₂-C₁₀-alkene,

and
optionally at least one ethylenically unsaturated monomer (C) differing from (A) and having at least one hetero atom,

and reaction with

at least one compound (D) of the formula I a or I b

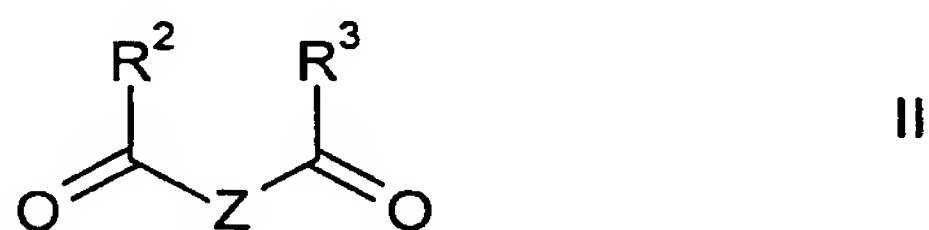


and optionally hydrolysis with water or an aqueous alkaline solution,

where, in formulae I a and I b,
A¹ are identical or different and are C₂-C₆-alkylene,
R¹ is linear or branched C₁-C₂₀-alkyl, and
n is an integer from 1 to 200.

11. The formulation according to claim 10, additionally comprising
 - (c) at least one substance which is selected from

dicarbonyl compounds of the formula II



and substances which liberate a dicarbonyl compound of the formula II in the presence of water, where, in the formula II,

R^2 and R^3 are identical or different and are selected from hydrogen, C_1 - C_{12} -alkyl, C_3 - C_{12} -cycloalkyl, substituted or unsubstituted, C_7 - C_{13} -aralkyl, C_6 - C_{14} -aryl, substituted or unsubstituted, it being possible in each case for two neighboring radicals to be linked to one another by formation of a ring,

Z is selected from a single bond and a bivalent organic group which in turn are selected from substituted or unsubstituted C_1 - C_{12} -alkylene units, unsubstituted or substituted C_5 - C_{12} -cycloalkylene, unsubstituted or substituted C_6 - C_{14} -arylene.

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12. The formulation according to claim 10 or 11, which is an aqueous formulation.

13. The formulation according to claim 10 or 11, which is a pulverulent formulation.

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14. The process for the preparation of a formulation according to any of claims 10 to 12, wherein

(a) at least one sheet silicate and

(b) at least one copolymer and, if appropriate

(c) at least one dicarbonyl compound of the formula II or

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at least one substance which liberates a dicarbonyl compound of the formula II in the presence of water are mixed with one another.

15. A process for the preparation of a pulverulent formulation according to claim 13, wherein said formulation is obtained by spray-drying.

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16. A semifinished product or leather produced by a process according to any of claims 1 to 9.

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17. The use of a semifinished product or leather, produced by a process according to any of claims 1 to 9, for the production of articles of clothing, pieces of furniture and automobiles and automotive parts.